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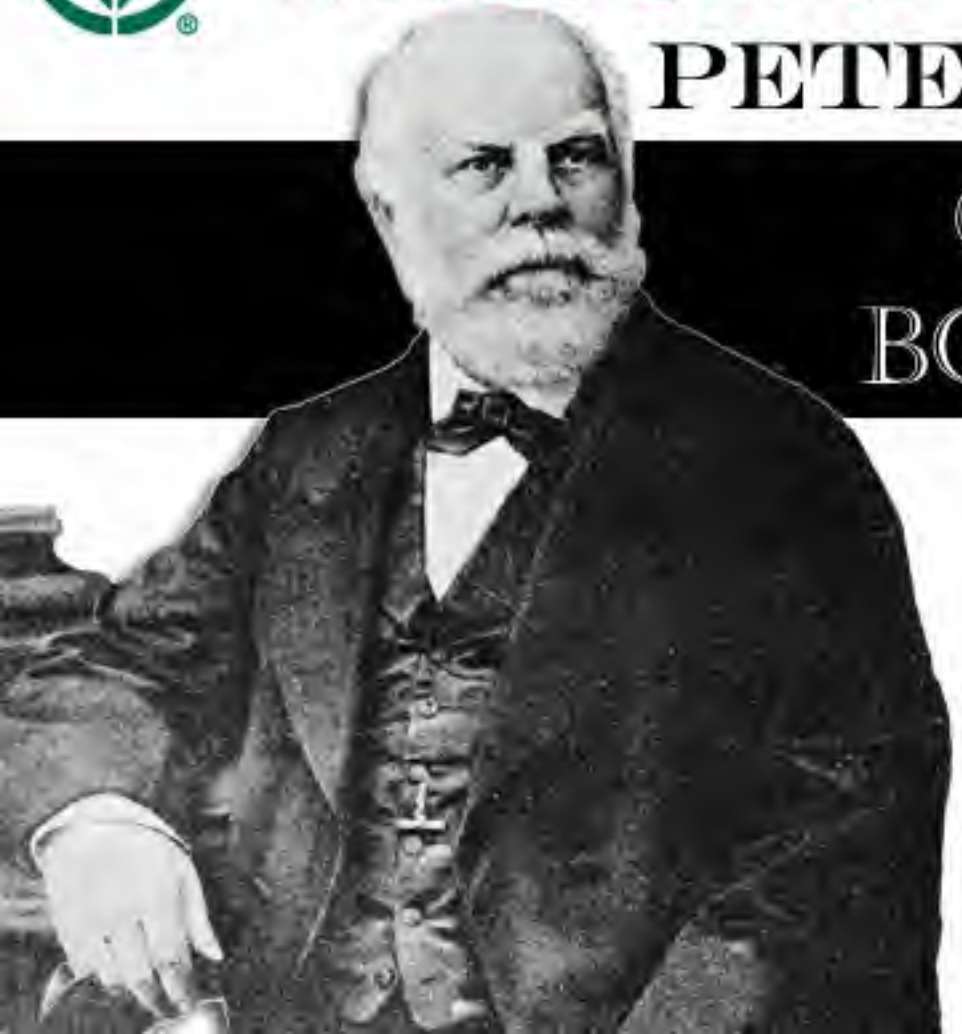

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TEMPERATURE.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861...	32.2	40.4	44.8	58.1	64.1	76.9	77.5	78.6	69.1	57.9	46.0	39.7	57.1°F.
1862...	28.9	30.2	43.2	55.0	69.7	75.1	81.2	80.7	72.1	57.3	42.6	41.3	56.4°F.

RELATIVE HUMIDITY.

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861...	72.2	63.3	64.5	61.5	66.3	70.8	66.3	69.6	77.3	76.6	69.0	74.3	69.5
1862...	85.3	73.9	70.8	67.0	57.3	67.0	66.8	64.3	74.2	67.2	69.5	74.6	69.8

III. *Yearly mean of Positive Electricity of Temperature, and of Relative Humidity of the Atmosphere, at the hours of* 6, 9, 12, 3, 6 *and* 9, *from morning till night, based upon daily observations at these hours through the years* 1861 *and* 1862, *at St. Louis, Mo.*

ELECTRICITY.

	At 6 A.M.	At 9 A.M.	At 12 M.	At 3 P.M.	At 6 P.M.	At 9 P.M.
1861	8.6	10.0	9.2	7.9	8.7	6.9
1862	8.9	10.0	9.1	7.3	8.1	6.8

TEMPERATURE.

1861	48.9° F...	54.9	61.6	63.6	59.3	54.3
1862	48.9	55.0	60.9	62.3	58.0	53.6

RELATIVE HUMIDITY.

186	86.4	71.3	60.3	57.2	65.1	77.3
186	5.3	70.6	60.0	57.5	67.6	78.0

cm 0 1 2 3 4 5 6 7 8 9 10
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V. *Positive or Negative Electricity*

	Positive Electricity.		Negative Electricity.		No Electricity, or 0.		Highest Positive Electricity.	
	1861.	1862.	1861.	1862.	1861.	1862.	1861.	1862.
Jan.....	179	179	3	5		2	40°	40°
Feb.....	162	166	6	2			34	33
March ...	168	179	15	8			30	48
April	157	157	12	22	1	1	33	52
May.....	171	180	17	5	1	3	25	32
June	162	143	5	2	8	20	16	21
July.....	183	153	3	8	1	24	14	11
August..	176	143	5	4	6	40	15	19
Sept.....	169	117	1	1	10	61	18	23
Oct.....	162	143	4	3	20	41	33	35
Nov.....	172	157	2	7	6	16	42	42
Dec.....	175	166	5	0	6	17	37	35
	2046	1883	78	67	59	225	42°	52°

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0 cm 1 2 3 4 5 6 7 8 9 10

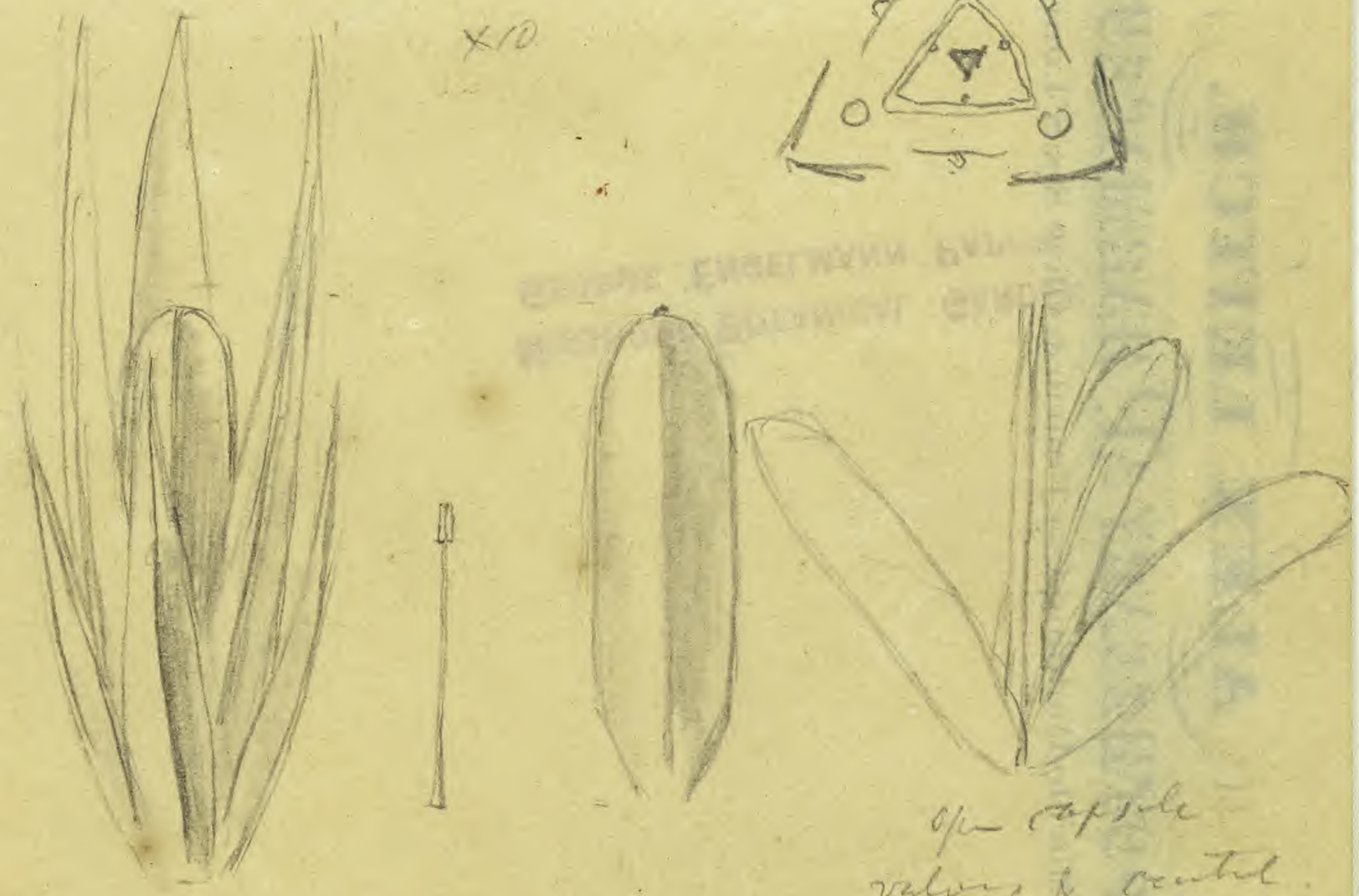
Cephalanthus Glabellatus Aug 26 1865
Leucorus Torrey

Hale, Louisiana

×60

rib, & annulus extremely delicate

×10



2/10 line long

op. capsule valves & central Column

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APOTHECARY & PHARMACEUTIST.
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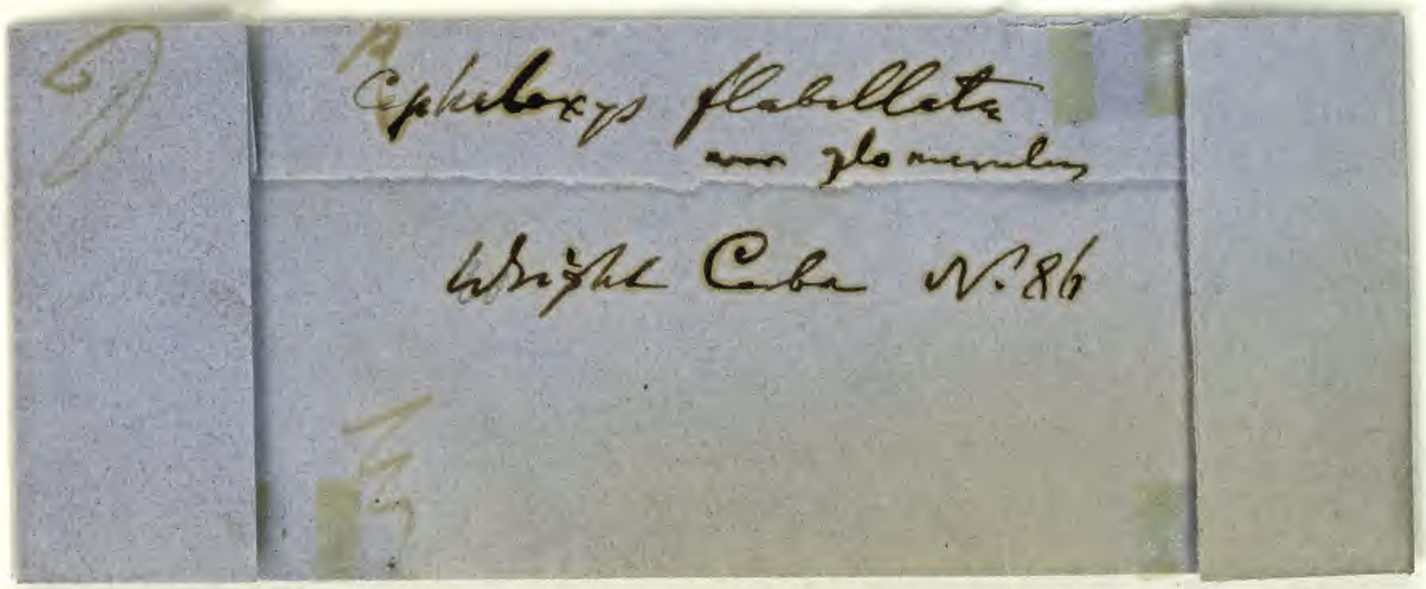

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Inocrus repens

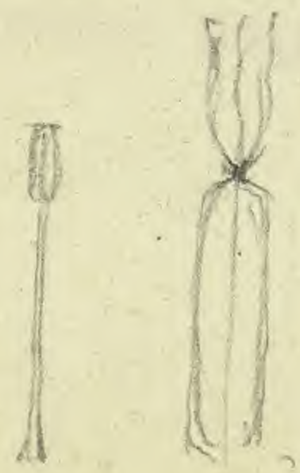
Berlin June 14 1868

Wright Cuba 1861 N. 86

glomerules 5-7 fl.
7 tuberosities

var glomerulus

var luxurians in
very large & broad
but essentially the same



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Sauvas reperi

	Ft Pickens	Gray	Leggett
	Canby	Canby	Canby
Salisbury Md.			
Florida	Buckley	Chapm	
	Lieut. Wheaton		
S Carolina	Ruthell	Ravenel	Hale
Louisiana	Hale	Hale	Carpenter
N. Carol	Curtis		Curtis
Alabama			Buckley
Cuba			Wright

Alex. Leitch

APOTHECARY & PHARMACEUTIST,

COR. 4TH & OLIVE STS., ST. LOUIS.

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August.....	3	.....	1	.....	1	2 .....
September.....	4	.....	.....	1	4	8 .....
October	3	1	1	1	7	1 .....
November	2	3	.....	7	.....	7 .....
December	2	3	.....	.....	.....	6 .....
	50 + el.	36 + el.	23 — el.	28 — el.	15 no el.	34 no el.

Snowing was accompanied

	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862	In 1861.	In 1862.	In 1861.	In 1862.
January.....	3	9	.....	2	.....	.....
February	12	8	.....	1	.....	.....
March	3	12	.....	.....	.....	.....
October.....	.....	1	.....	.....	.....	.....
November	.....	4	.....	.....	.....	.....
December	5	2	2	.....	.....	1 .....
	23 + el.	36 + el.	2 — el.	3 — el.	.....	1 no el.

REMARKS.

The monthly mean of atmospheric electricity in 1862 was not quite so regular as that in 1861. While in 1861 an un-

360-1

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The first group in 1861 is 32.8 in 1862,					
The second	"	"	33.5	"	35.2
The third	"	"	14.1	"	10.5

Thus in 1861 the third group prevailed, and in 1862 the first and second. But these differences are so well balanced throughout the year, that the mean of the whole year in 1861 and in 1862 is exactly the same, namely, 8.4. Such an identity in the yearly result, even to decimals, is of course not to be expected every year; but it seems to prove, at least, that the yearly mean of electricity is as constant as that of temperature, of relative humidity, and of atmospheric pressure.

The third table, showing the daily periodicity of atmospheric electricity, confirms the daily two maxima and two minima of electricity as an undeniable fact.

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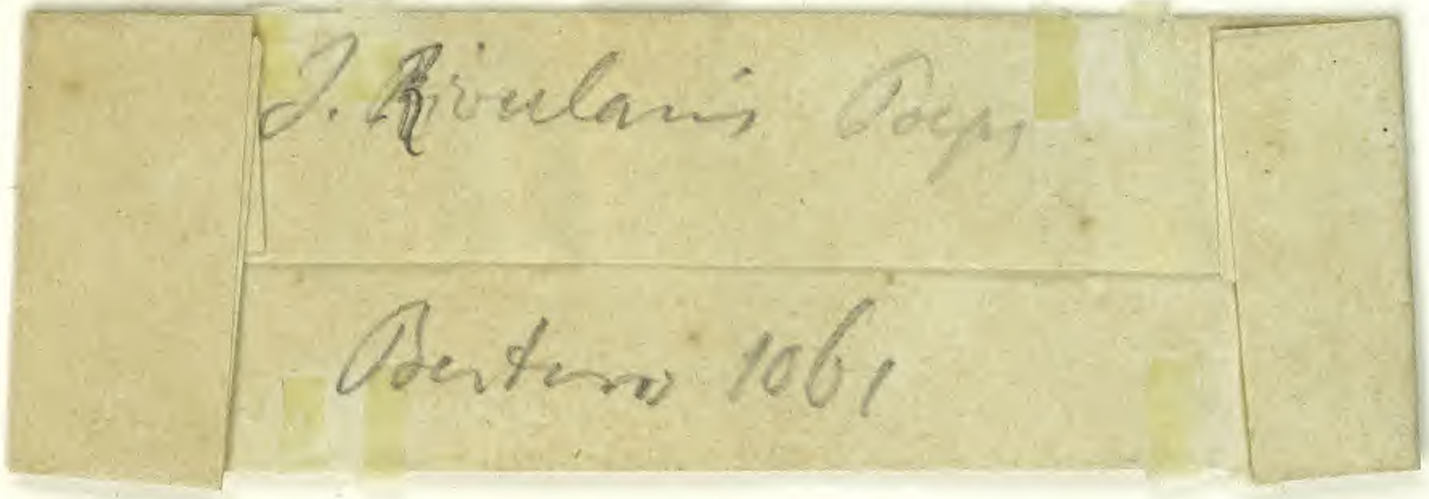
I. Riculanis Boeps
Bertero 1061

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cm
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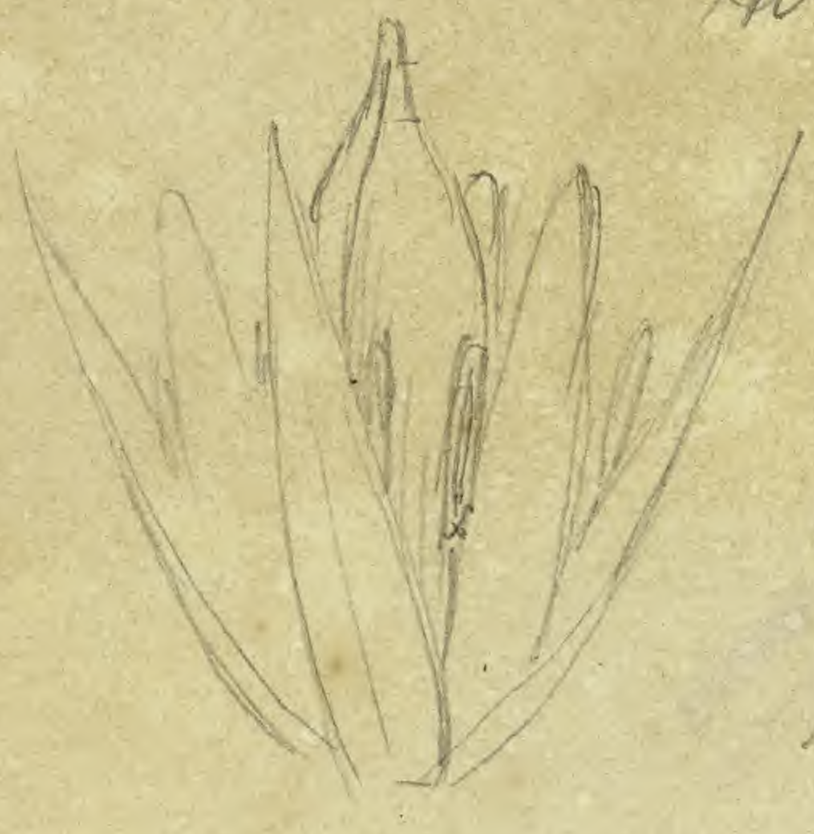
Juncus nivalis Poepp.

Sept 26 1865

Chili Bertero 1061 — HG Hos. M.

= J. graminifolius

x10



leaves flat 3–6 mm broad

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IV. *Direction of Winds and number of Thunderstorms in* '61 & '62.

1861.	E.	N.	N.E.	S.W.	N.W.	S.	W.	S.E.	Prevailing Winds.	Thunder-storms.
January.....	11	3	12	22	38	18	28	61	S.E.	 0
February	4	2	2	35	24	19	41	60	S.E.	 2
March.....	12	11	10	23	30	19	42	40	W. & S.E....	 3
April	16	10	9	26	21	35	34	26	S. & W.....	 2
May	26	10	23	21	8	13	49	35	W. & S.E. ...	 5
June	12	21	22	20	25	26	8	41	S.E.	 7
July	3	31	14	21	26	46	15	29	S.	 3
August	18	24	58	17	11	18	3	37	N.E.	 5
September...	6	14	18	26	30	13	21	52	S.E. & N.W.	 3
October	12	9	5	21	30	33	30	46	S.E. & S.....	 1
November....	7	15	8	22	27	20	36	44	S.E. & W....	 1
December ...	9	19	9	25	23	33	17	51	S.E. & S.....	 0
	136	169	190	279	293	293	324	522	S.E.	 32

1862.	E.	S.W.	N.	N.E.	W.	S.	N.W.	S.E.	Prevailing Winds.	Th. st's.
Jan.....	19	6	19	23	29	3	38	51	S.E.	1
Feb.....	14	9	18	16	22	7	39	43	S.E. & N.W.	0
March ...	9	14	3	15	59	10	34	43	W., S.E. & N.W....	4
April	12	13	18	31	18	11	34	47	S.E., N.W. & N.E..	6
May.....	12	18	14	38	18	30	14	44	S.E. & N.E.....	5
June	3	29	24	16	8	36	26	23	S., S.W., N.W., N. & S.E.....	6
July.....	5	25	17	7	2	24	31	77	S.E.	10
August	6	16	16	45	5	22	28	48	S.E. & N.E.	7

Additional Remarks on Atmospheric Electricity.

By A. Wislizenus, M.D.

The delay in the publication of this volume enables me to add to my observations of atmospheric electricity in 1861, the result of my observations in 1862. The latter observations have been made in the same manner and by means of the same fine glass thread, which, after many thousand torsions, proves as good as ever. I present herewith in tabular form the general result of my observations in 1861 and 1862.

I. *Monthly mean of Positive Atmospheric Electricity in* 1861 *and* 1862, *at St. Louis, Mo., based upon daily observations at* 6, 9, 12, 3, 6 *and* 9 *o'clock, from morning till night.*

	Jan.	Feb.	Mar.	Ap'l.	May.	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
1861*	10.5	12.1	9.2	8.8	7.8	4.0	3.7	3.4	3.0	7.1	10.0	14.3	8.4
										7.7	12.6	13.9	8.4

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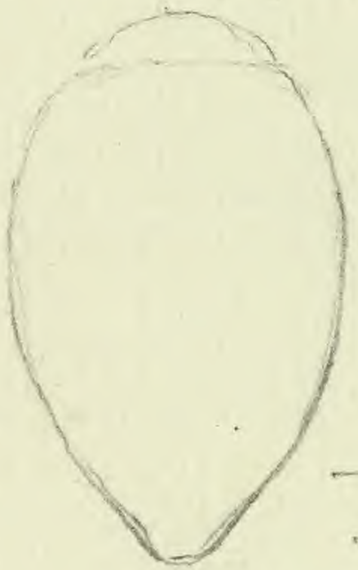
Pinnularia antarctica Hook fil ex Hk Grev

April 13 1866

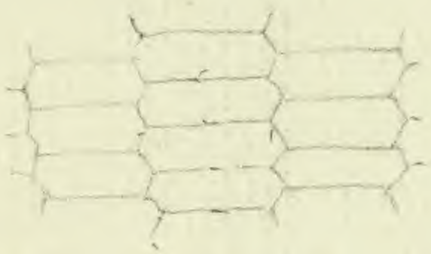
×60



is that normal
or ought it to be
reversed? as Hooker f
N. Antarct. tab 63
has it —

The hairy coating figured by Hooker f is also seen in this species but it is no Double integument seed not ripe.

smooth & shining
light brown —



×150

reticulation extremely fine
scarcely perceptible except in good light

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interrupted descent and ascent took place from January to December, we find in 1862 some interruptions in the steps of that ladder. The electricity in February, 1862, is about four degrees higher than that of January, April somewhat higher than March, and July is the lowest instead of September in 1861. These trifling irregularities may be accounted for by differences in temperature and relative humidity, and by a greater number of thunderstorms in 1862. January of 1862, for instance, was so unusually rainy, that its relative humidity too was unusually high, diminishing thus electricity. But the general features of distribution of electricity throughout the year are apparent in both years, and we may in that respect divide the twelve months of each year into two or three groups. Computing the months which give the highest electricity and those which give the lowest in each year, we find that in both years the months of January, February, March, April, November and December exhibit the highest, and the months of May, June, July, August, September and October the lowest electricity. The first group gives

The aggregate monthly mean of	71.5	degrees of	electricity	in 1861
and	74.6	"	"	" 1862
While the second group gives	29.0	"	"	" 1861
and	25.7	"	"	" 1862

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VI. The appearance of negative electricity was connected in

1861. No. times.	1862. No. times.	
30	32	with thunderstorms.
23	28	with rains without thunder and lightning.
20	4	with dry storms (without rain and without thunder and lightning).
4	3	with snow.
1	0	with fog.
78	67	

VII. *Relation of Rain and Snow to Electricity.*

Rain without thunderstorm was accompanied

	By Positive Electricity.	By Negative Electricity.	By no Electricity.

93332

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Ixeridium Ixeridium Kth? ? Sept 29 1865

Benth Cap. 6. sp. 2472

×60

×10

Capitula 5-angula
terminalia
2–5 flora

uniseja

Jam capsulo destituta
sine Bentham

Ligulae 5 glomer. 6 and.

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July	2	4	.....	.....	.....	
August.....	3	.....	1	.....	1	2 .....
September.....	4	.....	.....	1	4	8 .....
October	3	1	1	1	7	1 .....
November	2	3	.....	7	.....	7 .....
December	2	3	.....	.....	.....	6 .....
	50 + el.	36 + el.	23 — el.	28 — el.	15 no el.	34 no el.

Snowing was accompanied

	By Positive Electricity.		By Negative Electricity.		By no Electricity.	
	In 1861.	In 1862.	In 1861.	In 1862.	In 1861.	In 1862.
January.....	3	9	.....	2	.....	.....
February	12	8	.....	1	.....	.....
March	3	12	.....	.....	.....	.....
October.....	.....	1	.....	.....	.....	.....
November	.....	4	.....	.....	.....	.....
December	5	2	2	.....	.....	1 .....
	23 + el.	36 + el.	2 — el.	3 — el.	.....	1 no el.

REMARKS.

The monthly mean of atmospheric electricity in 1862 was not quite so regular as that in 1861. While in 1861 an un-

363

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September.

The aggregate monthly mean of

The first group in 1861 is	52.9	—in 1862,	54.6
The second	"	"	33.5	"	35.2
The third	"	"	14.1	"	10.5

Thus in 1861 the third group prevailed, and in 1862 the first and second. But these differences are so well balanced throughout the year, that the mean of the whole year in 1861 and in 1862 is exactly the same, namely, 8.4. Such an identity in the yearly result, even to decimals, is of course not to be expected every year; but it seems to prove, at least, that the yearly mean of electricity is as constant as that of temperature, of relative humidity, and of atmospheric pressure.

The third table, showing the daily periodicity of atmospheric electricity, confirms the daily two maxima and two minima of electricity as an undeniable fact.

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St. Louis Botanical Garden

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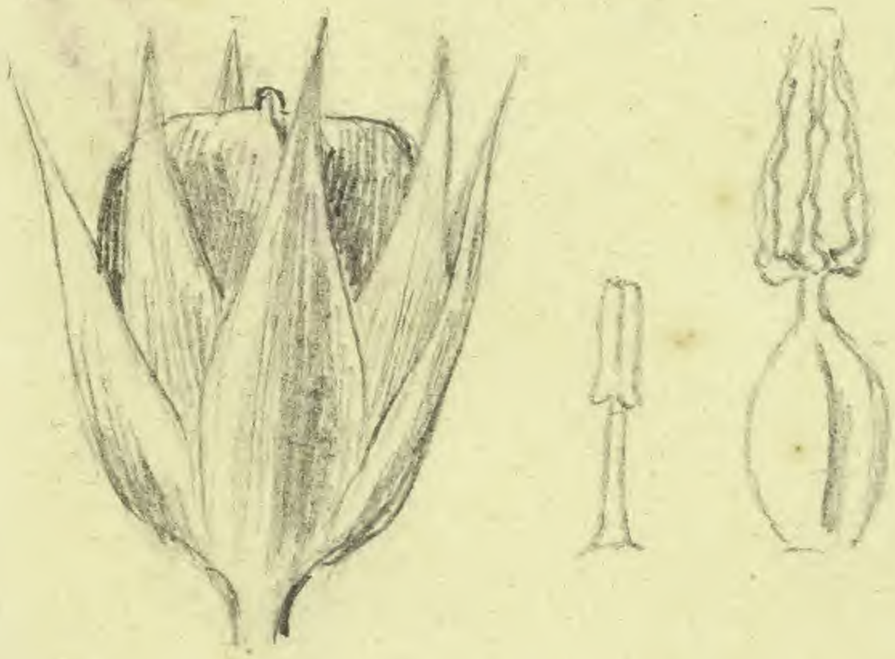
I. platycaulis H&K
Dunifloras Willd.

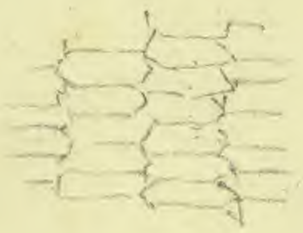
Herb. 1867

Ottawa, on Hb. Mus. Paris 1866

×60

×10





×150

×10

Sect of stem
1 inch below panicle

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ENGELMANN HERBARIUM

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